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The implications of the April 2010 oil spill on deepwater exploration and production

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Introduction

For many years, large exploration and production companies have been developing in deeper and deeper waters to find large untapped oil and gas reserves. The development of these reserves remains critically important to the global economy because it ensures that the world has sufficient hydrocarbons to support its growth and prosperity.

On April 20, 2010, an explosion and fire occurred on the offshore drilling rig *Deepwater Horizon*, which had been drilling an exploratory well in approximately 5,000 feet of water in the Gulf of Mexico (the Gulf). The drilling rig subsequently sank, with 11 crew members losing their lives and the uncompleted well gushing oil into the Gulf.[1]

The oil spill has become one of the worst environmental disasters in U.S. history and has set the stage for dramatic changes to the deepwater exploration industry. Moody's Investors Service has said that "the worst oil spill in U.S. history has created an unprecedented financial, legal, regulatory and environmental crisis for companies that operate in the Gulf."

As a result of the Gulf oil spill, the future costs of drilling and operating in the Gulf will rise considerably. Certain cost increases can be attributed to natural market forces, such as insurance and capital providers repricing the risk of drilling and operating in the deepwater. Other cost increases will be a result of significant changes in regulatory policy, which are currently being discussed by members of Congress. The repricing of risk in conjunction with proposed regulatory changes will have drastic long-term implications for exploration and production companies. Some of these implications are examined in the following pages.

The oil spill has become one of the worst environmental disasters in U.S. history and has set the stage for dramatic changes to the deepwater exploration industry.

[1] Energy Information Administration

Natural market reaction to Gulf oil spill

The Gulf oil spill has provided a stern reminder to industry participants about the level of risk involved in drilling in deep water. BP p.l.c. (BP)'s loss of approximately $70 billion in market capitalization illustrates for shareholders the extreme consequences of a catastrophic oil spill.[2] Furthermore, a repricing of risk is occurring that will affect the cost of drilling and operating in the deepwater Gulf.

This repricing of risk could result in the cost of insuring a drilling rig rising by as much as 50%, according to Moody's Investors Service.[3] The jump in insurance rates will translate to higher day rates on drilling rigs for deepwater exploration and production companies. This repricing of risk will also translate to a higher cost of capital for Gulf deepwater participants, since both investors and creditors will demand higher returns in exchange for the perceived higher level of risk. "As all of the costs associated with operating in the Gulf continue to rise, deepwater drilling will increasingly become the province of only the largest, most well-capitalized companies," says Rob Moore, a director in Grant Thornton LLP's Corporate Advisory & Restructuring Services (CARS) practice.

A repricing of risk will also result in exploration and production companies sharpening their own internal focus on increasing safety and minimizing the risk of an oil spill. While minimizing the risk of an oil spill has always been a priority for deepwater operators, so has the need to reduce drilling time and rig costs, which can total $1 million per day.[4] In the past, deepwater operators may have taken certain actions to expedite the drilling process by completing a well two or three days ahead of schedule and save $2 million to $3 million in rig costs. However, with the realization that a potential oil spill could result in billions in losses, deepwater operators will take a slower and more costly approach to drilling in order to avoid any unnecessary risks. This more measured drilling approach may also include greater redundancy in drilling safety equipment, which will further increase the cost of drilling.

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Director
Grant Thornton LLP, Corporate Advisory & Restructuring Services practice

[2] Moreano, Giovanny, "100 Days Later: BP Down $70 Billion in Market Cap," July 28, 2010, www.cnn.com
[3] "Lloyd's Boss Says Spill Upping Rates," *UpstreamOnline*, June 22, 2010, (www.upstreamonline.com/live/article218468.ece)
[4] Grant Thornton LLP estimates

Regulation

To have a better understanding of the anticipated long-term impact of the BP oil spill on the deepwater exploration industry, it is useful to examine the effects of proposed regulatory changes. While final regulations will not be signed into law for some time, several proposals have already been announced. These proposals include raising (or possibly eliminating) the current $75 million federal cap on economic liability from an oil spill,[5] increasing the civil and criminal penalties for an oil spill, requiring greater redundancy in drilling safety equipment, hiring additional federal inspectors, and imposing stricter requirements for deepwater drilling permits.

Unlimited liability

One provision that has garnered much support is the Senate Environment and Public Works Committee's proposed removal of the current $75 million federal cap on economic liability from an oil spill. Previous proposals sought to raise the cap to $10 billion[6]; however, with the costs of the BP oil spill steadily rising, policymakers are now seeking to impose unlimited liability. With estimates of BP's liabilities from this incident projected well into the billions, the current proposal is designed to ensure that the U.S. taxpayer will no longer be burdened by any costs associated with oil spills. Public outrage over the oil spill and concerns over federal budget deficits provide further incentives for U.S. policymakers to make certain that future oil spills will not be paid for by U.S. taxpayers. Meanwhile, deepwater drilling participants are becoming proactive. Their proposals include the imposition of some individual liability coupled with the establishment of a large fund that covers catastrophic oil spills and is paid into by multiple industry participants.

Higher civil and criminal penalties

Under the Clean Water Act, civil penalties currently begin at $1,100 per barrel of oil spilled[7] but can reach up to $4,300 per barrel if the leak is considered to be a result of gross negligence.[8] With an estimated 94 million to 184 million gallons of oil[9] having already leaked into the Gulf, civil penalties alone could total $8 billion to $18 billion.[10] Criminal penalties carry much higher costs, and prosecutors "are very likely to bring criminal charges against BP and other companies involved," according to David Uhlmann, professor at the University of Michigan Law School and former chief of the Justice Department's environmental crimes section. Raymond James analyst Pavel Molchanov recently estimated that combined criminal and civil legal costs would reach nearly $63 billion.[11] While BP may be able to shoulder these costs, such massive penalties could overwhelm other companies in the event of a similar spill. One example of boosted costs due to heightened civil and criminal penalties can be seen in a new provision in the CLEAR Act, a wide-ranging drilling reform bill recently approved by the House Natural Resources Committee. The CLEAR Act, an amendment to the Outer Continental Shelf Lands Act, raises civil penalties from $20,000 per day to $75,000 or even $150,000 per day and raises the maximum criminal penalties from $100,000 to $10 million for a violation.[12] Changes to the penalty structure are being discussed in Congress, and steep increases are likely to be seen across the board as prosecutors look at every possible civil and criminal charge that can be raised against BP.

[5] Oil Pollution Act § 1004
[6] "Raise BP Liability Cap to $10 Billion? White House Backs Senate Plan to Raise From $75 Million," May 5, 2010, www.msnbc.com
[7] Clean Water Act § 1321 (b)(7)(A)
[8] Clean Water Act § 1321 (b)(7)(D)
[9] The Associated Press (www.ap.org/oil_spill/)
[10] Grant Thornton LLP estimates
[11] Corkery, Michael, "BP Oil Spill Costs: $20 Billion? Try $63 Billion," *WSJ Blogs*, June 16, 2010
[12] Outer Continental Shelf Lands Act 2010, § 3346

Greater redundancy in equipment

The failure of the blowout preventer on the Deepwater Horizon rig has led to provisions in a Senate bill calling for greater redundancy in drilling safety equipment. According to Tony Gerbino, a director in Grant Thornton's Corporate Advisory & Restructuring Services practice, "the industry needs robust repair, maintenance and inspection services to evaluate the condition of equipment on the sea floor, along with certified operators to intervene when a fault is identified. The first line of defense is always redundancy; accordingly, double-stacking blowout preventers may be a good idea. Any and all of these measures will increase operating costs; however, they are all appropriate responses to clear and present risks that need to be responsibly mitigated." T3 Energy Services Inc., a provider of services and parts for blowout preventers, said it sees big opportunities for the company in the case of stricter regulations. As Chief Executive Officer Steve Krablin stated, "There's already a redundancy in the industry, but that doesn't mean there can't be more redundancy when you become very cautious about the effects of a tragedy like this."

Additional inspections

Many observers have argued that the Deepwater Horizon explosion would not have happened if inspectors had done their jobs more effectively, which has led to calls for more stringent inspections. On July 14, a bill was passed through committee that took several steps toward ending what policymakers refer to as "cozy relationships" between government regulators and the oil industry. A report by the inspector general of the Interior Department showed that some drilling regulators accepted gifts from oil and gas companies and even negotiated employment offers to work for the companies they regulated. The draft bill contains a provision restricting inspectors from going to work for the companies they have examined, including a two-year ban on accepting certain employment.

One mechanism for tightening inspection rules has already been put in place. Interior Secretary Ken Salazar's requested "reorganization and reform" of the Minerals Management Service (MMS) has begun. MMS is being split into three newly created agencies: Bureau of Ocean Energy Management (BOE), responsible for leasing areas of the Outer Continental Shelf; Bureau of Safety and Environmental Enforcement (BSE), responsible for ensuring comprehensive oversight, safety and environmental protection in all offshore energy activities; and Office of Natural Resources Revenue (NRR), responsible for royalty and revenue management, including collection and distribution of revenue, auditing and compliance, and asset management. The primary purpose of the agency split-up is to avoid any conflict of interest between revenue collection and safety oversight and allow each agency to specialize in a particular task, which will enable the BSE to focus strictly on safety inspections.

Stricter requirements for obtaining drilling permits

Proposals for imposing stricter requirements to obtain deepwater drilling permits have also surfaced. The BOE is now solely responsible for evaluating resources, planning and leasing, leaving the safety inspection to BSE and the royalty collection to NRR. Since the BOE will no longer be concerned with the impact of lease permits on revenue collection, the BOE may become more stringent in handing out leases and permits. The House Natural Resources Committee recently passed a provision banning a company from drilling for seven years if it has caused 10 or more deaths on work sites in the past seven years, thus creating yet another obstacle to receiving a permit.[13] Under this provision, a company cannot bid for leases or apply for drilling permits unless it can certify that it has paid damages and cleanup costs for any oil spill for which it is responsible. The company must also be able to certify that over the previous seven years, it has not been assessed more than $10 million in civil penalties and criminal fines[14] for violating the Clean Water Act. While this proposal may not affect all companies operating in the Gulf equally, it is just one of many regulatory changes being contemplated.

States push back: Not in their backyards

One draft climate bill would give each state the right to veto any drilling for up to 75 miles off its coast.[15] With the magnitude of ill will emanating from many of the coastal states, exploration and production companies would likely be pushed further out into the Gulf. This outward push not only makes drilling more difficult, but also gives the BOE an additional incentive to be stringent with permit issuance.

Increased regulation may also apply to state waters

Proposed legislation is also seeking to expand the federal government's regulatory power over exploration and production on state lands and waters. Historically, regulation of oil and gas drilling on state lands and waters has been enforced by the states. However, proposed legislation would require all rigs drilling off the U.S. coast — including those operating in state waters — to adhere to U.S. safety standards. Certain states, such as Texas, object to these provisions. While it is unclear whether states or the federal government will ultimately prevail on this issue, it is evident that oil and gas operators should prepare not only for additional regulation when operating in federal waters, but also for the possibility of additional regulation in state lands and waters.

[13] "BP Faces 7-Year Offshore Drilling Ban," July 15, 2010, www.bbc.co.uk
[14] "BP Faces 7-Year Offshore Drilling Ban," July 15, 2010, www.bbc.co.uk
[15] Lerer, Lisa, "West Coast U.S. Senators Propose Ban on Offshore Drilling," May 13, 2010, www.bloomberg.com

The financial impact of increased regulation

The federal government's closer oversight of inspections and its stricter requirements for obtaining permits will undoubtedly raise drilling costs. Greater involvement from inspectors may mean not only additional costs, but also drilling delays, which can increase rig fees. More stringent permit requirements will likely ratchet up engineering costs, since drilling plans will face sharper scrutiny. Furthermore, increased redundancy in equipment is likely to raise drilling costs. Instead of having one blowout preventer on a well, exploration and production companies may be required to have two of them. And they carry a steep price tag: Quest Offshore Resources Inc. estimates the current cost of one blowout preventer at $40 million, or 10% of the total cost of an offshore drilling well.[16] Multiplying that cost by a factor of two or more could conceivably result in costs that smaller companies may not be able to cover.

Moreover, the cost of a single blowout preventer is likely to rise. A House Energy and Commerce subcommittee is debating a bill that requires, among other things, the testing of fail-safe devices to ensure that they work. Adding the cost of these testing requirements to the cost of a piece of equipment that National Oilwell Varco Chief Executive Officer Pete Miller already considers tantamount to rocket science is likely to bump up drilling costs even further.

Smaller independent oil and gas companies without critical mass and strong financial resources will have difficulty absorbing the higher drilling and operating costs of a post-oil spill environment. For this reason, the need for critical mass and strong financial resources will be one of the drivers of consolidation of independent oil and gas companies. However, the biggest driver of industry consolidation may be what happens to the $75 million federal cap on economic liability from an oil spill.[17] Increasing the cap to $10 billion or removing it altogether will have drastic implications for deepwater exploration and production companies. The cost of obtaining a $10 billion insurance coverage will be prohibitively expensive, and smaller independents also lack the financial resources and strong balance sheets necessary to self-insure against an oil spill. Operating in the Gulf would likely become uneconomical for independent oil and gas companies.

In contrast, large integrated oil and gas companies with considerable financial resources and sizable balance sheets will be able to demonstrate the financial strength necessary to self-insure themselves against an oil spill and will be granted drilling permits from the BOE.

Industry players have begun to proactively address both the cost of the Gulf oil spill and the concerns of the federal government by funding a $1 billion venture to build standby containment equipment.[18] Other industry proposals include the imposition of individual liability along with the establishment of a large catastrophic-insurance plan funded by industry participants.

Smaller independent oil and gas companies without critical mass and strong financial resources will have difficulty absorbing the higher drilling and operating costs of a post-oil spill environment.

[16] Wethe, David, "Cameron, Gulf Rig Equipment Suppliers May Prove Winners After BP Oil Spill," May 19, 2010, www.bloomberg.com
[17] Oil Pollution Act § 1004
[18] "Oil Giants Create $1 Billion Rapid Response Venture," July 21, 2010, www.dailyfinance.com

Industry consolidation

If they are unable to obtain drilling permits, or if the cost of capital becomes prohibitively expensive for them, independent oil and gas companies will be forced to be acquired by large integrated oil and gas companies that can obtain permission to develop Gulf oil and gas properties. The following table illustrates whether each major participant in the Gulf is likely to be a potential acquirer, an asset divestiture candidate or a potential seller:

Consolidation in the form of asset divestitures or acquisitions could result in only a handful of large integrated oil and gas companies becoming operators in the deepwater Gulf. However, what are the market ramifications of smaller independent companies exiting from the deepwater Gulf?

Exploration and production companies operating in the Gulf

Gulf of Mexico participants		
Potential buyers	**Asset divestiture candidates**	**Potential sellers**
ExxonMobil Corp.	Anadarko Petroleum Corp.	ATP Oil & Gas Corp.
Chevron Corp.	Plains Exploration and Production Co.	Cobalt International Energy Inc.
Eni SpA	Nexen Inc.	Energy XXI Limited
Total SA	ConocoPhillips	McMoran Exploration Co.
BHP Billiton Ltd.	BP p.l.c.	Stone Energy Corp.
Royal Dutch Shell Plc.	Noble Energy Inc.	W&T Offshore Inc.
Statoil ASA	Total SA	BP p.l.c.
	Newfield Exploration Co.	Anadarko Petroleum Corp.
	Murphy Oil Corp.	Hess Corp.
	Marathon Oil Corp.	Murphy Oil Corp.
	Apache Corp.	
	Hess Corp.	

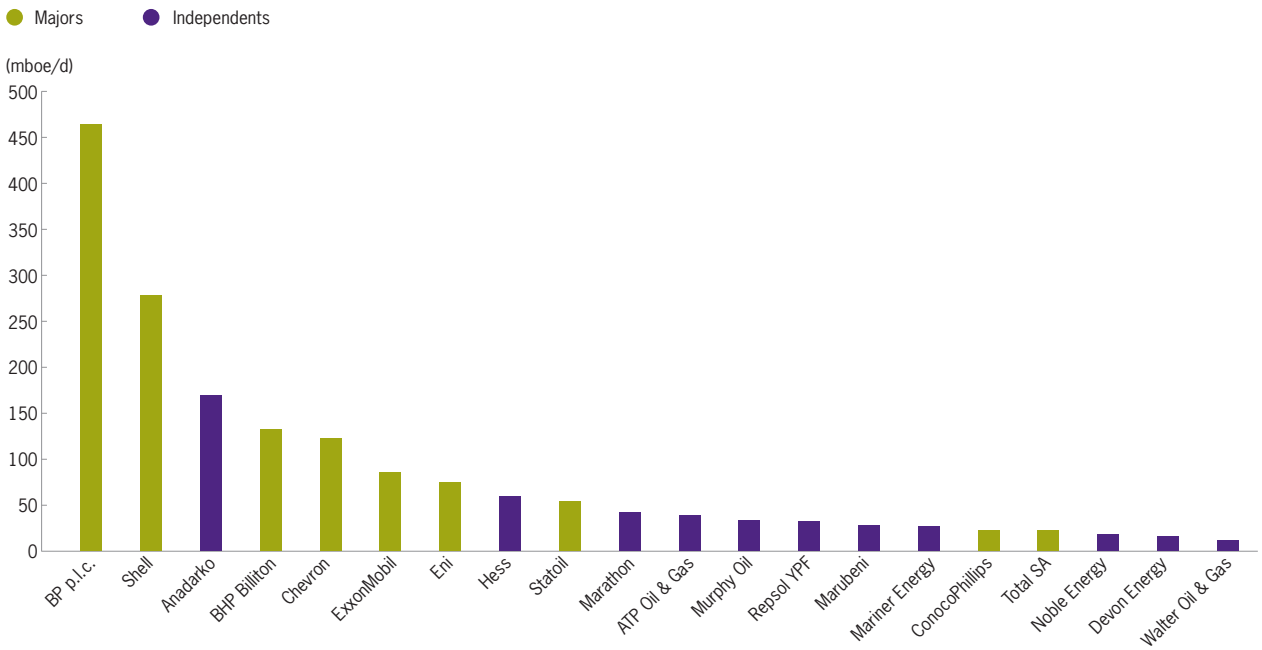
Source: Barclays Capital "Macondo Incident: Potential Implications," dated June 2010, slide 16.

Disadvantages of consolidation

Large integrated oil and gas companies with large acreage holdings tend to focus their efforts on making new oil and gas discoveries and exploiting previously undeveloped fields. This is in contrast to smaller independent companies, which have fewer oil and gas properties to evaluate, and thus do an excellent job of maximizing the oil and gas production for each acre. These independent oil and gas companies are experts at maximizing production in older, more mature fields and finding reserves considered a low priority by larger companies. Assuming that no consolidation occurs, production estimates for 2011 are as follows:

Consolidation of Gulf oil and gas properties into fewer hands could actually result in a decline in Gulf production. Large integrated oil and gas companies will now have even more properties to evaluate; consequently, mature fields and declining wells will likely not receive the attention needed to maximize the production of these fields.

2011 Estimated daily production



Source: Barclays Capital "Macondo Incident: Potential Implications," dated June 2010, slide 9.

Understanding the long-term ramifications of regulation

Given the scale of outrage over the BP oil spill, U.S. policymakers may feel that stringent regulatory changes are needed to satisfy the public's appetite for swift revenge on the energy industry. Undoubtedly, changes in regulatory policy are necessary to help prevent future oil spills. "Policymakers need a balanced outlook; they should consider a number of factors when making long-term regulatory changes affecting the oil and gas industry" states Loretta Cross, CARS managing partner.

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Managing Partner
Grant Thornton LLP, Corporate Advisory & Restructuring Services practice

Dependence on national oil companies and OPEC countries

Policymakers must remember that national oil companies (NOCs) control 77% of the world's oil reserves,[19] leaving integrated oil and gas companies with direct access to only 23% of reserves.[20] The fact that NOCs control 77% of reserves has serious long-term implications for the price of oil, because the actions of NOCs can be completely opposite that of normal market participants. Many NOCs use oil revenues to fund their countries' social policies, which enable their political leaders to remain in power. When oil prices are high, NOCs have more than sufficient oil revenues to fund their government budgets and thus have little incentive to increase production or boost supply. This scenario can lead to oil prices remaining high for an extended period. Conversely, when oil prices are low, NOCs do not have sufficient oil revenues to fund their government budgets, and they are forced to significantly increase production, which can lead to oil prices remaining depressed for an extended period. In addition, many NOCs are members of the Organization of the Petroleum Exporting Countries (OPEC). OPEC's members work together to restrict the supply of oil and therefore increase the price of oil. If stringent regulation makes it uneconomical for integrated oil and gas companies to access deepwater reserves, even greater market share and influence will be ceded by default to NOCs and organizations such as OPEC, which can have a detrimental impact on oil prices.

Policymakers should remember that integrated oil and gas companies serve an important market function by counterbalancing certain behavior of NOCs and OPEC. By boosting production during times of high prices and restricting production when prices are low, integrated oil and gas companies help provide stability to world oil prices.

[19] Helman, Christopher, "The World's Biggest Oil Companies," July 9, 2010, www.forbes.com
[20] Grant Thornton LLP estimates

U.S. dependence on oil imports

The U.S. currently imports approximately 60% of its crude oil.[21] Heavy dependence on foreign oil could ultimately have national security implications and leave the U.S. economy increasingly vulnerable to pricing power by OPEC. Consequently, U.S. officials have stated that reducing dependence on foreign oil is a policy objective. However, one critical component of reducing that dependence is developing Gulf reserves. The following table illustrates Gulf and other offshore reserves as a percentage of U.S. reserves:

The Gulf contains approximately 19% of U.S. crude oil reserves and 15% of total U.S. oil and gas reserves.[22] According to IHS Herold, deepwater Gulf discoveries are expected to add 900 Mb/d in oil production and nearly 6 Bcf/d of gas production by 2020.[23] These statistics show the importance of the Gulf to the U.S. policy goal of reducing reliance on foreign oil.

Year-end 2008 U.S. proved crude oil, condensate and natural gas liquid reserves

Million Barrels

	Crude oil	Condensate	Natural gas plant liquids	Total
U.S. total offshore	4,093	239	376	4,708
U.S. federal offshore	3,903	227	321	4,451
U.S. state offshore	190	12	55	257
U.S. onshore	15,028	1,194	7,466	23,688
U.S. total reserves	**19,121**	**1,433**	**7,842**	**28,396**
Total gulf offshore	3,599	239	375	4,213
Federal Gulf of Mexico	3,546	227	320	4,093
Gulf states offshore	53	12	55	120
Total offshore percent of total reserves	**21%**	**17%**	**5%**	**17%**
Total gulf offshore percent of total reserves	**19%**	**17%**	**5%**	**15%**

Note: Alaskan reserves are all shown as onshore.
Source: EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, 2008.

[21] Energy Information Administration
[22] Energy Information Administration
[23] 2010 IHS Herold Inc.

Statistically, another oil spill is a low-probability event

No one doubts that the recent oil spill is an environmental tragedy, and policymakers and deepwater operators must certainly work together to minimize the risk of another oil spill. However, the reality is that the BP accident was an extremely low-probability event. According to the Department of Energy, more than 36,000 oil wells have been drilled in the Gulf since exploration began in the 1950s.[24] Throughout this time, only the PEMEX IXTOC I well blowout in 1979, which spilled at a rate of 10,000 to 30,000 barrels per day, is regarded as a comparable event.[25] When making regulatory changes, policymakers should take into consideration the infrequent nature of oil spills.

Regulatory and market changes: Incentives for self-regulation

Proposed regulatory changes such as increasing the federal cap on economic liability from an oil spill to $10 billion — or even removing the cap entirely — offer a strong economic incentive for deepwater operators to self-regulate their internal procedures to minimize the risk of an oil spill.[26] BP's staggering loss of more than $70 billion in market capitalization[27] provides further incentive for self-regulation, which may replace the need for certain forms of government supervision and regulation.

[24] Department of Energy
[25] Department of Energy
[26] "Raise BP Liability Cap to $10 Billion? White House Backs Senate Plan to Raise From $75 Million," May 5, 2010, www.msnbc.com
[27] Moreano, Giovanny, "100 Days Later: BP Down $70 Billion in Market Cap," July 28, 2010, www.cnn.com

Conclusion

As a result of the recent BP oil spill, the cost of drilling and operating in the deepwater Gulf will rise considerably. This rise can be attributable to a repricing of deepwater drilling risk by insurers and capital providers, and to the effects of anticipated regulatory changes. Proposals for tighter regulation include increasing the civil and criminal penalties for an oil spill, requiring greater redundancy in drilling safety equipment, hiring additional federal inspectors, and imposing more stringent requirements for receiving deepwater drilling permits. Regulatory proposals also include increasing the federal cap on economic liability from an oil spill to $10 billion or even removing the cap altogether. This particular regulatory change would most likely lead to a great deal of consolidation, as only the largest integrated oil and gas companies would be financially capable of operating in the deepwater Gulf. The advantage of this scenario is that it would reduce the risk of U.S. taxpayers being liable for the cost of an oil spill. The disadvantage is that the loss of independent oil and gas companies could lower Gulf production by a significant amount, because independents excel at maximizing production of mature and declining fields.

As U.S. policymakers contemplate regulatory changes in order to reduce the probability of another oil spill, they must understand the economic ramifications of enacting too much regulation. Excessively stringent regulation could result in drilling and operating costs increasing to the point it becomes uneconomical to drill in the deepwater Gulf. Eliminating or significantly reducing Gulf production would increase U.S. reliance on foreign oil and leave the U.S. even more dependent on OPEC countries and NOCs. Increasing the market share and influence of OPEC countries and NOCs may result in significantly higher oil prices — and far less price stability in world oil markets.

In sum, policymakers must consider the long-term economic ramifications of their regulatory policies on deepwater operators. Policymakers should avoid making decisions solely out of a desire to satisfy the public's appetite for swift retribution on the energy industry.

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[28] "Raise BP Liability Cap to $10 Billion? White House Backs Senate Plan to Raise From $75 Million," May 5, 2010, www.msnbc.com

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